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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,186	10/24/2003	Yucong Wang	GP-303432	2595

7590 01/11/2007

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EXAMINER	
CHARLES, MARCUS	
ART UNIT	**PAPER NUMBER**
3682	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,186	WANG ET AL.	
	Examiner	Art Unit	
	Marcus Charles	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *17-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/24/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is the first action relating to serial application number 10/693,186 filed 10-24-2003.

Claims 1-22 are currently pending.

Election/Restrictions

1. Applicant's election without traverse of group 1, relating to claims 1-16 in the reply filed on 11-01-2006 is acknowledged.

2. Claims 17-22 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11-10-2006.

Drawings

3. The examiner has accepted the drawing filed with this application as formal drawing.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1- 8-10 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaida et al. (6,089,999) in view of Schlegel et al. (6,367,151). Imaida et al. discloses a transmission comprising a housing (103) having a bore, a bearing (101) within the bore, the bore includes a sleeve (as well known in the art). Imaida et al. fails to disclose the thermal spray coating between the bearing and the

housing. Schlegel et al. discloses a bore of a connecting rod (1) is plasma coated (thermal spray coating) to increase the frictional surface of the bore and to reduce expansion due to extreme heat conditions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bore of the housing of Imaida et al. so that the bore is thermally coated in view of Schlegel et al. in order to increase the frictional surface of the bore and to reduce expansion due to extreme heat conditions. In addition, Imaida et al. is silent concerning the material for the housing. It is well know in the art that housings made from aluminum are lighter without compromising strength. Therefore, it would have been obvious to nr of ordinary skill in the art at the time of the invention to produce the housing of out of aluminum in order to reduce the weight of the transmission.

In claims 8 and 14, note the thermal spray coating is applied by plasma thermal spray coating process.

In claims 9-10 and 15-16, it is apparent that Imaida et al. and Schlegel et al. inherently disclose the claimed invention because the housing of Imaida et al. would include a cover and a case

6. Claims 3 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaida et al. and Schlegel et al. and EP (10209246) to Knepper et al. Imaida et al. and Schlegel et al. disclose the claimed invention above, except that the material of the thermal spray coating comprises steel alloy. It is well known in the art that alloy steel exhibit high strength at very high temperature. Knepper et al. disclose a thermally spray coating comprising steel alloy made from 24-35 % Cr, 2-9 % Si, 1-4 % Mn, up to 0.15 C

up to 30 % Ni and the balance Fe in order to withstand high temperatures. How ever, Knepper et al. fails to disclose the exact values as claimed. It would have been obvious to one of ordinary skill in the art at the time of the invention to select the steel alloy as claimed, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 f.2nd 272, 205.

7. Claims 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaida et al. and Schlegel et al. as applied to claim 1 above, and further in view of Allen et al. (6,435,830). Imaida et al. and Schlegel et al. do not disclose the thickness of the coating and the thermal coating is from nickel alloy. Allen et al. disclose a thermal spray thermal coating material of 10-40 Cr, 5-35 % Al, 0-7 % Y and the primary balance of Ni (all these values falls within the specified claimed ranges) in order to withstand high temperatures and corrosion. In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the thickness of the coating approximately 0.2mm to 0.8mm, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 f.2nd 272, 205.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imaida et al. and Schlegel et al. as applied to claim 1 above, and further in view of KR (2005065911) to Kim et al. Imaida et al. and Schlegel et al. do not disclose the coating is of Copper alloy. Kim et al discloses a thermal spray coating comprise a copper alloy with 1-50% Al and Fe respectively, 0-2=0% Ni and the balance of Cu (these values are within the specified claimed ranges) in order to prevent corrosion. Therefore, it would

have been obvious to one of ordinary skill in the art the time of the invention to modify coating of Imaida et al. and Schlegel et al. such that the coating is a copper alloy in view of Kim et al. having the specified claimed composition as claimed so as to prevent corrosion

9. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaida et al. and Schlegel et al. as applied to claim 1 above, and further in view of Marantz et al. (5,714,205). Imaida et al. and Schlegel et al. are silent concerning the application of the thermal spray coating is application by two wires. It is well known in the art to apply thermal coating with two wires in order to protect the molten material from atmospheric contamination. Marantz et al. disclose the process of applying thermal spray coating with two wires (56, 58). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply thermal coating using two wires in view of Marantz et al. in order to protect the molten material from atmospheric contamination.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shepley et al. (5,622,753), Kramer et al. (5,271,967), Ashary et al. (5,326,645) disclose thermal spray coating process. Kapaan et al. (2004/0248678), JP (2003-254412) to Tanigawa, and DE (3810448) to Buri disclose a transmission with a bearing bore and a bearing inserted therein. Seitz (6,258,416) EP (1281786), JP (2000-271729) and EP (0637695) disclose the method of thermal spray coating.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcus Charles
Primary Examiner
Art Unit 3682
January 04, 2007